PMH2

PATTERNS IN PRESCRIPTIONS OF ANTISYPCHOTICS FOR PATIENTS WITH MOOD DISORDERS AND THEIR OUTCOMES

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OBJECTIVES: To determine patterns in the prescriptions of antipsychotics in patients with mood disorders. To investigate adverse effects of antipsychotics in patients with mood disorders and their relationship to other prescription drugs. **METHODS:** The MarketScan database, for year 2000, containing information on outpatient doctor visits and consumption of prescription drugs on millions of Americans with health care coverage was used. Patients with at least a mood disorder were identified by ICD9 codes. Their prescription drug record for this year was also identified. This was populated with drugs names by NDC codes tables from the FDA website. Antipsychotic drug use was categorized as first generation or second generation and logistic regression was used to determine odds ration controlling on demographics. Furthermore, patients were classified as having a metabolic disorder, such as hyperglycemia or diabetes, and odds ratios were computed controlling for the generation of the antipsychotic. The data were also analyzed using data mining techniques such as cluster analysis and link analysis. **RESULTS:** Antipsychotics were highly used in the treatment of mood disorders. Second generation antipsychotics were prescribed almost two times more often than first generation antipsychotics. The odds of having a metabolic disorder are almost 50% higher for patients using second generation antipsychotics than for patients using first generation antipsychotics. Cluster analysis shows that metabolic disorders and other chronic diseases are rather common among patients with mood disorders. Link analysis shows that the use of second generation antipsychotics is strongly connected to the use of antidepressants. **CONCLUSIONS:** These findings suggest that people taking second generation antipsychotics should be closely monitor for the development of metabolic disorders. More efforts should be made to investigate the association between chronic diseases and mood disorders.

PMH3

DESCRIPTIVE UNDERSTANDING OF DIAGNOSED OPIOID MISUSERS VERSUS OTHER OPIOID USERS

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OBJECTIVES: This analysis groups opioid users into misusers and non-misusers and characterizes them by potential risk factors that may help medical decision-makers identify and differentiate legitimate opioid users from misusers. **METHODS:** Patients with at least one opioid claim were identified in the commercial and Medicare MarketScan claims databases from January 1, 2000—December 31, 2008. All subjects had continuous eligibility from 6 months before the first opioid claim to 24 months after. Subjects with at least one claim with a diagnosis of opioid abuse or dependence (ICD-9 304.0x or 305.5x) were classified as misusers. Misusers were compared to other opioid users on demographics, comorbidities, pharmacy use, and medical service utilization. **RESULTS:** Of 2,841,793 opioid users who met all inclusion criteria, 2913 were diagnosed misusers. Mean age for misusers and non-misusers was 38 and 48 years respectively ($p < 0.0001$); misusers were 60% male versus 44% for non-misusers ($p < 0.0001$). Misusers used more opioids in 2 years than non-misusers: 273 days supply versus 33 days ($p < 0.0001$); 2.4 different short-acting opioids (SAO) versus 1.4 ($p < 0.0001$); 1.4 different long-acting opioids (LAO) versus 1.1 ($p < 0.0001$). Misusers used more pharmacies than non-misusers: 3.3 different pharmacies versus 1.4 ($p < 0.0001$). Misusers used more medical services (PMPY) than non-misusers: 10.3 physician visits versus 6.5 ($p < 0.0001$); 9.0 OP mental health visits versus 0.7 ($p < 0.0001$); 0.8 IP admissions versus 0.1 ($p < 0.0001$). 54% of misusers had comorbid substance abuse versus 1% of non-misusers ($p < 0.0001$). Misusers used key concomitant drugs more than non-misusers: 22.7% gabapentin use versus 4.5% ($p < 0.0001$); 8.1% buspirone hydrochloride use versus 1.1% ($p < 0.0001$); 52.6% benzodiazepine use versus 19.5% ($p < 0.0001$); 40.4% muscle relaxant use versus 16.5% ($p < 0.0001$); 44.7% SSRI use versus 14.6% ($p < 0.0001$). **CONCLUSIONS:** Among opioid users, diagnosed misusers likely do not represent all misusers, but they show clear differences from undiagnosed misusers in terms of comorbid conditions and health care service use.

PMH4

DEMOGRAPHIC RISK FACTORS AFFECTING BENZODIAZEPINE-RELATED EMERGENCY ROOM VISITS IN KANSAS CITY, MO FROM 2001 TO 2007

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OBJECTIVES: Misuse of benzodiazepine is associated with negative health outcomes at both individual and societal level. The study objective was to identify demographic risk factors associated with benzodiazepine-related emergency room visits. **METHODS:** We conducted the retrospective study using the Missouri Hospital Discharge Data for Kansas City, MO from 2001 to 2007. The data included patients' demographic variables such as age, gender, ethnicity, health insurance status, and annual income. Patients with benzodiazepine-related emergency room visits were identified by ICD-9 codes, and the frequencies of patient visits were calculated according to each of the demographic variables. A multiple logistic regression analysis was conducted, where the outcome variable was a benzodiazepine-related emergency room visit (yes/no), and the independent variables were the demographic variables. **RESULTS:** Of the 1,317,566 emergency room visits over the seven year period, 562 were identified to be benzodiazepine-related. Fifty-one percent of the visits were by patients aged 25 to 44, of whom 56% were female, 77% were white, 74% had health insurance, and 44% had an annual income of $40,000 to $59,999. In the logistic regression, white patients were 73% more likely than black patients to have benzodiazepine-caused emergency room visits ($p < 0.01$), with an odds ratio (OR, 95%CI) of 5.63 (4.33–7.30). Compared with those aged 0–19 years, the odds ratio for patients aged 30–39 to have benzodiazepine-related emergency room visits was 2.73 (2.09–3.57), and the odds ratio for patients aged 40–49 was 2.84 (2.17–3.71). **CONCLUSIONS:** White patients aged 30–49 were at higher risk to have a benzodiazepine-related emergency room visit. Health interventions such as medication management services may reduce benzodiazepine-related emergency room visits for these patients.

PMH5

INFLUENCE OF PSYCHIATRIC COMORBIDITY AND POLYPHARMACY ON HOSPITALIZATION AND EXPENDITURES AMONG SECOND GENERATION ANTIPSYCHOTIC USERS WITH METABOLIC SYNDROME

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OBJECTIVES: Studies concerning metabolic effects associated with second generation antipsychotics (SGAs) fail to control for psychiatric comorbidities or medications known to affect weight. We analyzed a large administrative claims database to determine the associations of psychiatric comorbidity and polypharmacy and hospitalization and expenditures among SGA users with metabolic syndrome (MetS). **METHODS:** Using descriptive and logistic regression analyses, we examined the effects of psychiatric comorbidity and polypharmacy on the association between SGAs (aripiprazole, ziprasidone, risperidone, quetiapine, and olanzapine) and hospitalization and expenditures among antipsychotic users with MetS. Psychiatric comorbidities included schizophrenia, bipolar, depression, and other psychiatric disorders. Psychiatric polypharmacy was concomitant use of antipsychotics with psychiatric drugs with metabolic effects (selective serotonin reuptake inhibitors [SSRI], tricyclic antidepressants [TCA], other antidepressants, and mood stabilizers). We also controlled for sociodemographics and insurance. Outcomes of interest included all-cause hospitalization and expenditures, disaggregated to non-psychiatric and psychiatric-related events. **RESULTS:** SGA users with MetS were more likely to have hospitalization than non-SGA users with MetS (OR = 1.29; $P < 0.05$); however, the association became non-significant upon controlling for psychiatric comorbidity and polypharmacy. Instead, having schizophrenia, bipolar, depression, or other psychiatric disorders significantly increased the odds of hospitalization (ORs = 2.56, 1.44, 1.73, 2.06, respectively; all $p < 0.0001$), as did concomitant use of SSRIs or TCAs (ORs = 1.35 and 1.36, respectively; both $p < 0.01$). Among MetS patients, total medical expenditure was higher in SGA users than non-SGA users (median $15,077 vs. $7,776, respectively; $p < 0.0001$). Controlling for psychiatric comorbidities and polypharmacy in antipsychotic users with MetS, SGA use increased total expenditures by 16.6 % ($p < 0.0001$). Psychiatric comorbidity and polypharmacy also significantly contributed to total expenditures by 13–30% ($p < 0.001$). **CONCLUSIONS:** Among patients with MetS, psychiatric comorbidity and polypharmacy are associated with higher risk of hospitalization and expenditures in SGA users than non-SGA users. Findings suggest clinicians should consider patients' psychiatric comorbidity and polypharmacy burdens when prescribing SGAs.

PMH6

NURSING HOME USE OF ATYPICAL ANTIPSYCHOTICS FOR BEHAVIORAL AND PSYCHOLOGICAL PROBLEMS OF ELDERLY WITH DEMENTIA: A SYSTEMATIC REVIEW

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OBJECTIVES: The key objective of this study was to review evidence regarding off-label use of atypical antipsychotics for treating behavioral problems in patients with Dementia of Alzheimer's type. A secondary objective was to examine patterns of atypical antipsychotic drug use in this population with respect to the extent and type of neurological and mental health co morbidities. **METHODS:** National Nursing Home Survey (NNHS, 2004), a nationally representative survey of US nursing home residents, was utilized to identify residents with senile dementia of the Alzheimer type (SDAT). Variables that represented attention to dementia care and special services for behavioral problems were analyzed to understand treatment patterns and associated medication use. Relationships between atypical antipsychotic drug use and the type and extent of neurological and mental health co morbidities were discerned using appropriate bivariate and multivariate statistics. **RESULTS:** The un-weighted resident sample yielded 1958 (14.5%) cases of SDAT, with more women (77.2%) than men. More than half of the residents diagnosed with the condition belonged to the age group 70 years or older. While 166 (8.5%) residents participated in a special program for dementia, about 238 (12.15%) of the residents received special services for behavioral problems. 618 (31%) residents were prescribed at least one of the top three atypical anti-psychotic medications. Prevalence of neurological and mental health co morbidities varied from 37% (Depression), 7.8% (Psychosis), 3.9% (agitation) to 1.8% (Schizophrenia). **CONCLUSIONS:** Prevalence of SDAT increases with age. The use of atypical antipsychotics is high in this segment of the nursing home population and a substantial portion of prescribing maybe off-label, especially when used for the treatment of behavioral problems. Existence of co morbidities may be a contributing factor to the increased prescribing of atypicals in nursing homes.